show immediately that a considerable facilitation of the furnace working must result if the pig iron is introduced into the furnace in an already molten instead of the solid state. This appears adoptable without anything further in works which have their own blast furnaces. It will warrant to these works the further advantage that the blast furnaces are spared the costs of casting the pig iron into pigs, and breaking and carriage of the same. Of course, the oxidising action oE the furnace during melting down will be lacking, whence the ore addition must undergo a further increase.

For pig iron of: the previously assumed composition, /.<»., 1 per cent. Si, 2 per cent. Mn, 0*5 per cent. P, and -i per cent. 0, one would proceed thus. Such a metal must give rise to a charge growth of

1 por cent. Sixl'OOr-HK) por cent.

ON") ,, 1;»X2 :::•: I'OO

•1 ,, (Jxl'-tT: ..... -frNiS „_ _

7'SS ..... ~,

Less 2 por tumt. Mn X <KJ2 (HM ,, _ Not 7 -21 por (unit.

This is thus 4/51) per cent, more than yielded by the preceding, whilst the increased heat required per kilogramme steel must be as follows :--

1 per cent. Si. X<)«V - (>»">

()',"> „ I» X '!():: 20

4 „ OX ^V:~IO()_ IS,")

LOHN 2 ,, Mi IX 7-" M

Not," 171 calories.

If the pig iron bo introduced into the furnace with an available heat of 250 calories, there would be received from

250 the pig iron . ^' =2H8 calorics por kilogramme steel.

Thus the pig-irou procosw with molten charges, with respect to the amount ot heat required from the furnace, appears at the least not lens advantageous than the pig and scrap process.

(d) The nii-trou /Vwvxtf //*?/// Molten,

The pig procosH with uiolUjn charyos has been sought in many quarters, though it has generally yielded few favourable

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